

CLAIMS

1. A swing mechanism for a construction machine, said swing mechanism being provided with:

a swing frame,

5 an inner race having an internal gear on an inner circumferential portion thereof and mounted on a side of a base,

an outer race rotatably arranged surrounding said inner race and provided with said swing frame mounted thereon,

10 a pinion inserted through a pinion insertion hole formed in said swing frame and maintained in meshing engagement with said internal gear,

15 a pinion drive device for rotationally driving said pinion, and

a pin fit-in hole arranged in said swing frame such that a knock pin fixed on said outer race is fitted in said pin fit-in hole to position said swing frame, characterized in that:

20 a pin fit-in hole portion through which said pin fit-in hole is formed is arranged on said swing frame at a location in a vicinity of a place of meshing engagement between said pinion and said internal gear such that said pin fit-in hole portion extends toward said pinion insertion hole, and said pin fit-in hole is located on or in a vicinity of a line that extends through a center of rotation of said outer race and a center of rotation of said pinion.

25 2. A swing mechanism according to claim 1, wherein:

said knock pin for positioning said pinion drive device is arranged between said swing frame and said pinion drive device, and

5 a center of said knock pin for positioning said swing frame, said knock pin being fitted in said pin fit-in hole, and a center of a knock pin for positioning said pinion drive device are each located on or in a vicinity of a line that extends through said center of rotation of said outer race and said center of rotation of said pinion.

10 3. A swing mechanism according to claim 2, wherein :
 said pin fit-in hole is arranged in a center frame of said swing frame.

15 4. A swing mechanism according to claim 2, wherein said fit-in hole in which said knock pin for positioning said pinion drive device is fitted is arranged through a flange portion of said pinion drive device and a bracket for mounting said pinion drive device.

20 5. A method for measuring a backlash of a swing mechanism for a construction machine, said swing mechanism being provided with a swing frame, an inner race having an internal gear on an inner circumferential portion thereof and mounted on a side of a base, an outer race rotatably arranged surrounding said inner race and provided with said swing frame mounted thereon, a pinion inserted through a pinion insertion hole formed in said swing frame and maintained in meshing engagement with said

internal gear, a pinion drive device for rotationally driving said pinion, and a pin fit-in hole arranged in said swing frame such that a knock pin fixed on said outer race is fitted in said pin fit-in hole to position said swing frame, which comprises:

5 measuring a distance between a center of said knock pin for positioning said swing frame, said knock pin being fitted in said pin fit-in hole, and a center of a knock pin arranged between said swing frame and said pinion drive device to position said pinion drive device,

10 calculating, from the distance so measured, a distance between a center of rotation of said outer race and a center of rotation of said pinion, and

 determining, from the distance so calculated, said backlash to be formed after assembly of said swing mechanism.

15 6. A method according to claim 5, further comprising determining, from the backlash so determined, whether or not the backlash after the assembly of said swing mechanism falls within a tolerance range.